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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,605	09/21/2006	Geoffrey Mark Condick	4623-062133	1664

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EXAMINER
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PAIK, SANG YEOP

ART UNIT	PAPER NUMBER
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3742

MAIL DATE	DELIVERY MODE
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03/23/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/593,605	<b>Applicant(s)</b> CONDICK, GEOFFREY MARK	
	<b>Examiner</b> SANG Y. PAIK	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/19/07</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the recited term "normal" or "faulty" is a term of a relative degree which renders the scope of the claim vague and indefinite.

In claims 3 and 4, there is no proper antecedent for "the optical detector".

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 3, 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell et al (US 5,383,019) in view of Ukon et al (US 2002/0071117).

Farrell shows the spectrometer claimed including a detector for detecting a signal from a plasma sample from an inductively coupled plasma torch, a lens, and a control section including a computer with a software for receiving a signal from the detector and a RF power generator for powering the induction coils to generate the plasma torch.

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But, Farrell does not explicitly show that the detector is for detecting a change in the plasma from the normal plasma to the toroidal or faulty plasma.

Ukon shows that it is known to provide a plasma spectrometer with an optical detector for detecting the plasma status including plasma shape which is analyzed by the light generated by the plasma, and Ukon teaches that the plasma status dictates or influences the analytical performances of the plasma torch. Ukon further shows a computer along with a video camera for monitoring the plasma status, including the plasma intensity and the position

In view of Ukon, it would have been obvious to one of ordinary skill in the art to adapt Farrell with the spectrometer for detecting varying degrees of the light generated by the plasma to determine the plasma status to further control the operating conditions or performances of the plasma torch to either shut down or power up the plasma generator depending on the detected plasma status, including the changing status from the normal plasma shape to a faulty shape, for establishing a desired torch condition.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell in view of Ukon as applied to claims 1, 2, 3, 6 and 9 above, and further in view of Krupa et al (US 5,642,190) or Shiller (US 3,692,415).

Farrell in view of Ukon shows the structure claimed except for an optical fibre.

Krupa or Shiller shows that it is known in the art to use an optical fiber for transmitting light.

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In view of Krupa or Shiller, it would have been obvious to one of ordinary skill in the art to adapt Farrell, as modified by Ukon, with an optical fiber for conducting or transmitting light to an optical detector.

6. Claims 5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell in view of Ukon as applied to claims 1, 2, 3, 6 and 9 above, and further in view of Ni et al (US 6,526,355).

Farrell in view of Ukon shows the structure claimed except for a photodiode.

Ni shows that it is known in the art that a plasma spectrometer is a photodiode array or a one or two dimensional CCD array.

In view of Ni, it would have been obvious to one of ordinary skill in the art to adapt Farrell, as modified by Ukon, with the optical detector in the form of a pixel photodiode array or any other suitable array, to more accurately and effectively measure the light generated by the plasma.

7. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell in view of Ukon as applied to claims 1, 2, 3, 6 and 9 above, and further in view of Tanaka et al (US 2003/0192864).

Farrell in view of Ukon shows the structure claimed except for the detector for measuring the impedance value of the plasma.

Tanaka shows that it is known to provide a plasma device with an impedance detector for detecting the impedance of the plasma for determining a plasma status.

In view of Tanaka, it would have been obvious to one of ordinary skill in the art to adapt Farrell, as modified by Ukon, with the detector for measuring an impedance of the

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plasma by measuring the voltage and current source to also determine the plasma status to further control the plasma torch conditions.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SANG Y. PAIK whose telephone number is (571) 272-4783. The examiner can normally be reached on M-F (9:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571) 272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SANG Y PAIK/  
Primary Examiner, Art Unit 3742